

# 1. Introduction

Human activities have become a major factor that significantly affects the global environment. Mankind has increasingly used land, water, minerals and other natural resources since the beginning of industrialization, and future growth in the population and economy is thought to further enhance the impact upon the Earth. The global climate, biogeochemical processes and natural ecosystems are closely linked with one another, and changes in any one of these systems may affect the others, which could result in consequences detrimental to humans and other living organisms on the Earth. Gaseous and particulate matters produced by man and emitted into the atmosphere have modified the energy balance in the atmosphere and thus affect interactions among the atmosphere, hydrosphere and biosphere. Nevertheless, mankind still does not sufficiently understand the chemical composition of the atmosphere and its relationship with the hydrosphere and biosphere. Most of the uncertainties in the chemistry of the atmosphere and oceans arise from the lack of observation data.

The World Meteorological Organization (WMO) started the Global Atmosphere Watch (GAW) programme in 1989 to promote systematic and reliable observation of the global environment, including greenhouse gases (CO<sub>2</sub>, CH<sub>4</sub>, CFCs, N<sub>2</sub>O, etc.) and other gases (e.g., CO, NO<sub>x</sub> and SO<sub>2</sub>) in the atmosphere. In October 1990, the WMO established the World Data Centre for Greenhouse Gases (WDCGG) at the Japan Meteorological Agency (JMA) in Tokyo as one of the GAW World Central Facilities to collect, archive and distribute data for greenhouse and related gases in the atmosphere and oceans. The WDCGG collects data from a number of observation sites worldwide that are involved in GAW and other scientific monitoring programmes (Appendix: LIST OF OBSERVING STATIONS).

The WDCGG has provided its users with data and other information in its regular publications, *Data Report*, *Data Catalogue*, *Data Summary* and *CD-ROM* (Appendix: LIST OF WMO WDCGG PUBLICATIONS) since its establishment. However, in view of the recent progress in Internet technologies, the WDCGG has changed its policy to discontinue *Data Report* and *Data Catalogue* as conventional forms of publication and has started providing equivalent data and information on the web. Now, all the data and information, including those included in *Data Summary* and *CD-ROM*, are available over the Internet through the enhanced WDCGG web site as shown below. This should promote user friendly access to data, information and products in line with the Strategy of the Implementation of the Global Atmosphere Watch Programme (2001-2007) published in June 2001.

This newly published Strategy also requests the GAW facilities including World Data Centres to build up an analysis capability in cooperation with the scientific research community and coordinate scientific assessments of atmospheric environmental issues. The WDCGG has consequently decided to enhance its analytical activities and provide the results by *Data Summary* annually (formerly biennially). At present, the WDCGG focuses on global and

integrated analyses to document changes on a global scale. Furthermore, it will be important to gradually revise and improve the contents of *Data Summary* based on comments from data contributors and scientists, and then provide scientists and policy makers with more and more advanced analytical information. The WDCGG welcomes comments and suggestions concerning the *Data Summary* and other publications at the address below. It is hoped that the analytical information presented here will not only stimulate the use of data for greenhouse gases and other gases but also lead to an appreciation of the value of the GAW programme in total.

Mailing address: WMO World Data Centre for Greenhouse Gases (WDCGG)  
c/o Japan Meteorological Agency  
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E-mail: [wdcgg@hq.kishou.go.jp](mailto:wdcgg@hq.kishou.go.jp)  
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Web Site: <http://gaw.kishou.go.jp/wdcgg.html>

Note:

The WDCGG thanks all the data contributors including those involved in the measurement at sites for their efforts to maintain the observation programme and continue providing data. The WDCGG requests the data users, when they use any data and information provided by the WDCGG, to acknowledge the contributors (Appendix: LIST OF CONTRIBUTORS) by citing the data sources appropriately.

The following is an example of a citation:

Tans, P., K. Thoning and L. Waterman, 2002. Atmospheric CO<sub>2</sub> monthly mean concentration, Barrow. In: WMO WDCGG DATA SUMMARY (WDCGG No. 26), JMA, Tokyo, 21.